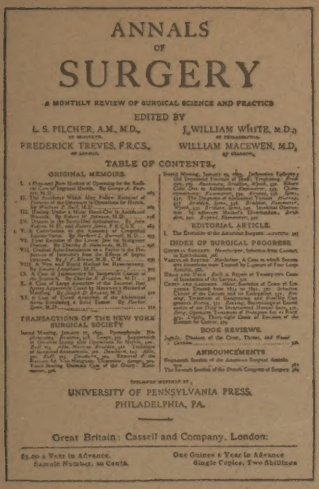
MONKS (Geo. H.)

REPRINTED FROM



ANNALS
OF
SURGERY

A MONTHLY REVIEW OF SURGICAL SCIENCE AND PRACTICE

EDITED BY

L. S. PILCHER, A.M., M.D., of Brooklyn.
J. WILLIAM WHITE, M.D., of Philadelphia.
FREDERICK TREVES, F.R.C.S., of London.
WILLIAM MACEWEN, M.D., of Glasgow.

TABLE OF CONTENTS.

ORIGINAL MEMOIRS.

EDITORIAL ARTICLE.

INDEX OF SURGICAL PROGRESS.

BOOK REVIEWS.

ANNOUNCEMENTS.

PUBLISHED MONTHLY BY
UNIVERSITY OF PENNSYLVANIA PRESS,
PHILADELPHIA, PA.

Great Britain: Cassell and Company, London.

$3.00 a Year in Advance. Single Number, 30 Cents.
One Guinea a Year in Advance. Single Copies, Two Shillings.

JULY, 1893

UNILATERAL LARYNGECTOMY; A CASE OF EXCISION OF THE RIGHT HALF OF THE LARYNX FOR CARCINOMA; RECOVERY; NO RECURRENCE AT THE END OF A YEAR.

By GEORGE H. MONKS, M.D.,

SURGEON TO THE CARNEY HOSPITAL; SURGEON TO OUT-PATIENTS AT THE BOSTON CITY HOSPITAL, AND ASSISTANT IN CLINICAL AND OPERATIVE SURGERY AT THE HARVARD MEDICAL SCHOOL.

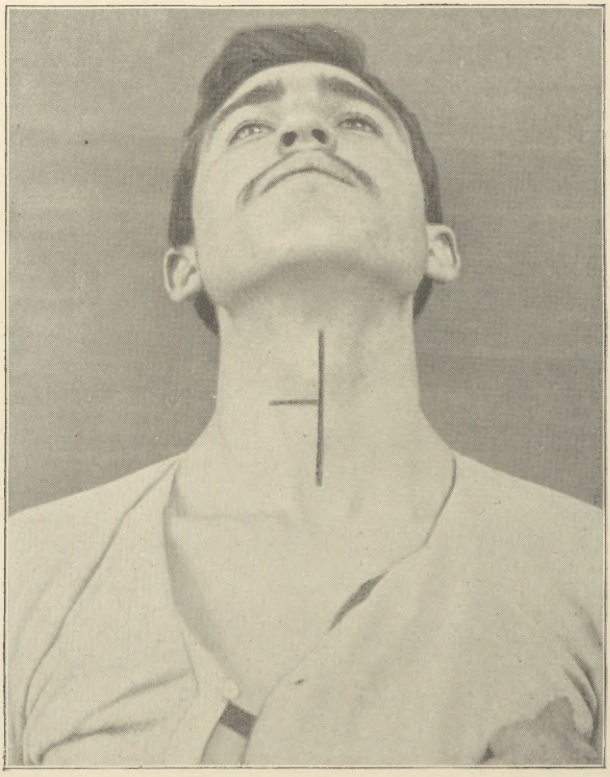


FIG. 1.—Showing lines of external incision.

UNILATERAL LARYNGECTOMY: A CASE OF EXCISION OF THE RIGHT HALF OF THE LARYNX FOR CARCINOMA; RECOVERY; NO RECURRENCE AT THE END OF A YEAR.[1]

By GEORGE H. MONKS, M.D.,

SURGEON TO THE CARNEY HOSPITAL; SURGEON TO OUT-PATIENTS AT THE BOSTON CITY HOSPITAL, AND ASSISTANT IN CLINICAL AND OPERATIVE SURGERY AT THE HARVARD MEDICAL SCHOOL.

ON May 17, 1892, at the Carney Hospital, I excised the right half of the larynx in a man thirty-nine years of age. The operation was done for the removal of an epithelioma involving the right vocal cord.

The after-treatment, so important in cases of this kind, was carried out with the most conscientious attention to details by the House Surgeon, Dr. F. J. Giblin, and the Sisters at the hospital. The recovery from the operation was speedy and uninterrupted, and the patient left the hospital twenty-five days after the operation with an ordinary silver tracheotomy tube tied in the wound. Soon after this he resumed his occupation (that of a photographer), and, ever since, has been able to earn his former wages.

Shortly before he left the hospital the patient was able to talk intelligibly in a hoarse whisper, and since then his voice has gradually improved in strength and tone. After removal of the tube he pulls together the edges of the wound in his neck, or covers it over with a pad or with his finger tips; and the current of air is thus driven through what remains of his larynx into his mouth, and his phonation, though hoarse, is excellent. Lately I have had made for him a tracheotomy tube with a fenestra in its upper part, and, with this in position, he can talk satisfactorily

[1] This patient was shown at the Congress of the American Surgical Association, in Boston, June, 1892, and, somewhat later, at that of the American Laryngological Association. The case was reported in full, and the patient again shown at the meeting of the Surgical Section of the Suffolk District Medical Society, February 1, 1893.

when the outer opening of the tube is plugged. He generally uses a cork for stopping this aperture. It is now about one year since the operation, and there is no sign of recurrence, and the patient enjoys excellent health.

A Detailed Account of the Case.

Some time previous to the operation this patient had been under the care of Drs. J. W. Farlow and W. F. Knowles in the out-patient department at the hospital.

The man had had marked and persistent hoarseness for about a year. When the case was first seen by Drs. Farlow and Knowles, the right vocal cord was somewhat thickened and reddened, and its movement during respiration and phonation was extremely limited.

For a long time the case was carefully watched, and various methods of treatment, both local and general, were faithfully tried. In spite of this the voice remained husky, and the immobility of the right vocal cord became even more pronounced.

In all other respects the man seemed to be well and strong. He never had marked pain in his throat or difficulty in swallowing. No cachexia was present. The family history revealed no trace of cancer.

About this time I was asked to see the case in consultation, with reference to a surgical operation, looking to the partial or complete removal of the larynx.

The case seemed to be a favorable one for operation. The growth was apparently confined to one side of the larynx, and no enlargement could be detected in the cervical glands. The neck was long and thin, and the larynx very prominent—just such a neck, in fact, as one would prefer in case a laryngectomy were to be performed. In view of all the circumstances it was decided that an operation was justifiable—in fact, that the right half of the larynx, and all the soft parts within it, should be removed.

A careful explanation was made to the patient, who was a remarkably intelligent man, as to the probable course of the disease if left to itself, and as to the prospects in case an operation should be done.

After a few days' deliberation he returned to the hospital to say that he had decided to undergo the operation and to put himself in our hands.

A private room at the hospital was prepared for him. It was thoroughly cleaned and aired, and the bed was placed near the middle of it. The upper end of the bed was covered with a light canopy to keep off the drafts, and a steam jet was so arranged that the air under the canopy should be sufficiently warm and moist. The temperature of the room itself, when all was in readiness for the patient, was about 75° F., and until the patient was practically out of danger after the operation it was never allowed to go lower than this, or above 80°. Arrangements were also made for a special watch through the day and night.

The patient was given an ounce of castor oil on the night before the operation, and an enema in the morning. The entire neck and vicinity were sterilized and enveloped in an antiseptic dressing. At the operation I was assisted by Dr. Knowles and Dr. H. W. Cushing. When the patient was thoroughly etherized, several pillows were placed under his shoulders so as to allow the head to fall back and fully expose the front of the neck. (See Fig. 1.)

Two straight incisions were made; the one (vertical) in the median line of the neck from the hyoid bone to about an inch and a half below the cricoid cartilage, the other (horizontal), on the right side of the neck, about the level of the lower border of the thyroid cartilage. This second incision joined the first at right angles. Part of the sterno-hyoid muscle was divided in the transverse incision.

The thyroid and cricoid cartilages on the right side were laid bare, the soft parts having been carefully dissected away from them.

The adjacent (the right) half of the back of the cricoid was then separated from the anterior wall of the œsophagus, so that after the operation was finished the œsophageal wall might be left intact as high up as possible, and the liability to regurgitation of food diminished.

After the bleeding was arrested the trachea was opened at he lowest part of the wound, just below the cricoid cartilage,

and a large-sized silver tracheotomy tube inserted. The whole larynx was then split in front, in the median line, and the two halves held apart, while gauze was packed into the lowest part of the cavity firmly upon the tracheotomy tube. The cavity of the larynx having thus been shut off from the trachea the entire right half of the larynx was removed, the incisions beginning from below.

First, the right half of the trachea was divided just below the cricoid cartilage; then the knife was placed within the larynx, and the posterior part of the cricoid cartilage split vertically in the median line from the front.

The thyroid cartilage was then carefully separated from its attachments to the soft parts behind, and, after this, the thyro-hyoid membrane was divided. Lastly, the superior cornu of the thyroid cartilage was pulled down and cut out. In all this dissection the edge of the knife was kept as close as possible to the cartilages.

Thus, the entire right half of the larynx was removed, including one-half of the thyroid and cricoid cartilages, the crico-thyroid membrane, the right arytenoid cartilage, the right vocal cord, and the other soft parts belonging to the right side of the larynx. Care was taken, when separating the thyroid cartilage at its anterior superior angle, to preserve as much as possible of the base of the epiglottis.

An examination of the specimen after removal showed that the growth had not been fully removed, and that a part of it, which had extended across the median line in front to the other side, had been left at the anterior end of the left vocal cord. This portion was removed by the scissors, which were made to cut well into the sound tissues about the growth.

The bleeding during the operation was not excessive, but troublesome on account of the difficulty in preventing the blood from running down the trachea after the gauze about the tracheotomy tube had been saturated. Elevating the foot of the table kept the blood from the trachea, but, as this expedient greatly increased the hæmorrhage, it had to be abandoned.

The wound left, after the parts above mentioned had been

removed, was large and irregular, and at its upper part communicated freely with the pharynx and œsophagus. A large-sized soft rubber stomach tube was passed from the wound through this opening well down into the œsophagus. Iodoform gauze was packed into the wound about this tube, and the skin edges above it were then approximated by silk sutures.

The patient stood the operation very well, and he was taken to his room with two tubes in his neck, the one leading to the œsophagus and the other to the trachea.

The resected portion of the larynx was sent to Dr. E. M. Greene, the pathologist of the hospital, and a few days later the following report was returned: "The specimen . . . showed a considerable increase in the size of the vocal cord. No ulceration was observed. Microscopical sections showed the normal tissue of the cord to be almost entirely replaced by a new growth made up of irregular masses and nests of large epithelial cells. Here and there broken-down muscular fibres were seen, surrounded by the growth. Diagnosis: Epithelioma."

The patient recovered quickly from the ether, and complained of no pain or distress, except when he made the motion of swallowing.

During convalescence the chief difficulty experienced was in preventing the discharges at the wound from trickling down the trachea and causing irritation and cough. There was also some trouble in carrying out proper alimentation.

For the first few hours after the operation there was a good deal of coughing, and mucus mixed with blood was expectorated in large quantities. Finally, the foot of the bed was raised, and this procedure was found to be so efficient in keeping the bulk of the discharges out of the œsophagus that the bed was kept in this position, day and night, for about a week.

On the day after the operation the rubber stomach tube was removed, and for a day a large-sized soft rubber catheter was put in its place. After this, whenever it was necessary to feed the patient, the catheter was introduced through the wound into the œsophagus, and liquid food administered through it. The patient was fed, every three hours or so, with egg-nog, whiskey

and milk. He did not like beef-tea. At first there was some regurgitation through the œsophageal wound, but this was largely prevented by pressing a plug of gauze against the wound during the act of swallowing.

On the day after the operation the silver tube was removed from the trachea, and a glass tube, with an inflated rubber jacket about it, put in its place. This contrivance, which I devised after the plan of Trendelenberg's canula, answered the purpose admirably, and was used until the troublesome mucous secretion and the accompanying cough had largely subsided. Had I thought of making such a tube before I should certainly have used it during the operation, and possibly throughout, in preference to the ordinary tracheotomy tube. This tube can be made very rapidly, and with little or no expense, somewhat as follows:

A piece of glass tubing about four inches long, and having a calibre of about a third of an inch, is bent at an oblique angle near its middle in such manner as not to interfere with the calibre of the tube. A long rubber finger, such as can be procured in any rubber store, is nicked in two places—at the tip of the finger and at a point one side near the open end. The glass tube is then pushed through these two holes and the rubber tied firmly about it. A little glass tube is inserted at the open end of the finger, and this end is tied closely upon it. A rubber tube is attached to the small glass tube, and a small spring clip put on.

The rubber jacket can then be inflated, when in position, by an air-bulb, after which the spring clip is set and the bulb detached. (See Fig. 2.)

On the fourth day after the operation the temperature was 100°, the highest point during the whole course of the case. This temperature was speedily brought down by an enema, which was followed by a copious dejection. The glass tracheal tube was removed for good on the fifth day. The same day some ale was given to the patient through the œsophageal catheter. This seemed to stimulate him in a most satisfactory manner. A spray of benzoinol and guiacol, administered from time to time, afforded great relief.

FIG. 3.—The canula resting in the tracheal opening.

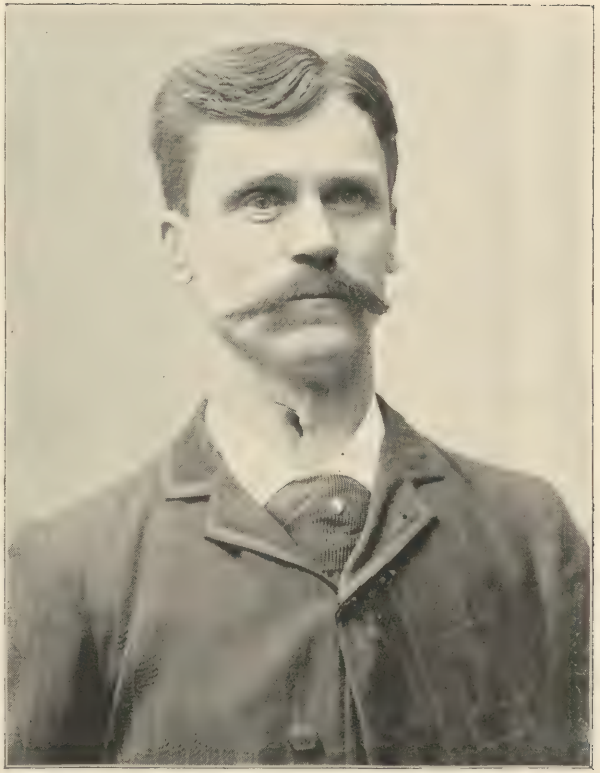


FIG. 4.—The present condition of the operation field.

On the ninth day fine bits of beefsteak were chewed and swallowed with evident relish, but the tube was still necessary when fluids were taken. On the tenth day the patient sat up for a while in a chair, and about this time it was noticed that he could talk in a rough whisper by closing the opening in his neck.

Later, the opening showed a tendency to close, and it was thought best to keep an ordinary tube in the tracheal wound.

Soon after the patient left the hospital he acquired the power of swallowing liquids without the use of the catheter, and without regurgitation through the wound, so long as slight pressure was kept up at the opening into the œsophagus. (See Figs. 3 and 4.)

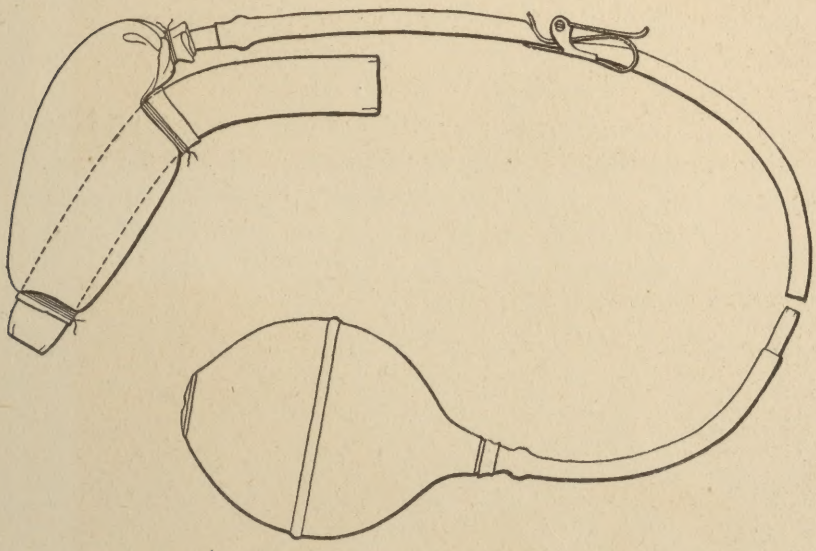


FIG. 2.—Glass trachea tube with rubber jackets inflated.

Figures 3 and 4 are from photographs of the patient taken about a year after operation. The contraction of the parts during cicatrization forced the tracheal tube from the opening, which was originally made for it in the trachea, up into the larger wound which was left because of the removal of part of the larynx. This accounts for the fact that in these cuts the opening for the tube appears to be somewhat to the right of the median line. Though the tube now occupies a higher position than before, it

does not touch the left vocal cord, a circumstance which would seriously interfere with phonation when the tube was in place.

Figure 4 shows the tube about to be introduced. The tip is within the wound, and the broad shield rests upon the collar of the patient. The fenestra on the upper curvature of the tube is plainly shown, and a cork has been placed in the outer opening. The patient wears this tube day and night, only removing it for the purpose of cleaning it. It is held in place by a tape about the neck.

This patient breathes easily, talks intelligibly, sleeps and eats well. He does as much work, and for the same remuneration, as was the case before he lost half of his larynx. He seems to be thoroughly satisfied with the results of the operation.

Remarks.

This case seems to me worthy of being recorded if for no other reason than that it shows that removal of half the larynx, in favorable cases, is not inconsistent with the subsequent comfort and usefulness of the patient, without any great loss of natural voice and without recurrence for a long period of time.